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Determinants of Second Language Proficiency among Refugees in the Netherlands

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Little is known about the language acquisition of refugees in Western countries. This study examines how pre- and post-migration characteristics of refugees are related to their second language proficiency. Data are from a survey of 3,500 refugees, who were born in Afghanistan, Iran, Iraq, former Yugoslavia and Somalia, and who resided in the Netherlands. The analysis shows that speaking and reading skills are better among refugees who received more pre-migration schooling, who migrated from a major city, and who arrived in the host country at a younger age. Post-migration characteristics are also important. Language skills are better among refugees who only lived in a refugee reception center for a short while, who completed an integration course, who received post-migration education, who intend to stay in the host country, and who have fewer health problems.

Introduction

Researchers have shown a growing interest in the determinants of immigrants' second-language proficiency (for an overview, see: Chiswick and Miller 2007; Esser 2006). One reason for this interest, is that the second-language skills of immigrants play a key role in their position in the labor market. Immigrants who are more proficient in the host-country language are more likely to find a job and to have higher earnings (Chiswick and Miller 2002; Shields and Price 2002). In addition, immigrants establish more contacts with the native population when they have more knowledge of the second language (Martinovic, van Tubergen and Maas 2009). Finally, the language proficiency of immigrants has important consequences for the educational and occupational careers of their children (Heath, Rothon and Kilpi 2008), and thereby plays a significant role in the integration of future generations.

This article contributes to the existing literature by examining the language acquisition of refugees. Most studies on the determinants of immigrants' language acquisition have focused on labor and family immigrants, but little is known about the language skills of refugees (Fennelly and Palasz 2003). Because of the different migration backgrounds of refugees, it is uncertain whether the patterns found for labor and family immigrants are also found among refugees. Furthermore, the current study develops and tests new hypotheses that seem particularly relevant for the study of refugees. For example, many refugees have experienced traumatic events (Marsella, Bornemann, Ekblad and Orley 1994), but little is known about the impact of depression and health problems on language acquisition.

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Furthermore, many refugees stay at reception centers for a long time, but it is unknown whether the time spent in a reception center affects language learning. Likewise, after refugees receive permanent residence permits, many follow courses that are aimed to increase their host-country language skills and to foster their socio-economic and socio-cultural integration in the host country. However, little is known whether such "integration courses" are effective.

In this study, I examine the second-language acquisition of refugees from Afghanistan, Iran, Iraq, former Yugoslavia, and Somalia in the Netherlands. These refugee groups mainly arrived in the 1990s, as a result of war, suppression and poverty. The five groups are particularly interesting to study, for two reasons. First, all groups arrived without any knowledge of the Dutch language. Hence, their Dutch skills only reflect the investments after migration, not exposure to Dutch before coming to the Netherlands. Second, these groups are the largest refugee groups in the Netherlands, and their presence in other European countries is also substantial. Thus, insights obtained from this study are also important for understanding the language acquisition of refugees in other countries.

Data are from a large-scale survey conducted among almost 3,500 refugees in the Netherlands in 2003. A unique feature of the survey is that survey instruments were translated and that detailed questions were raised on migration history, integration and language proficiency. I examine both speaking skills and reading skills.

Theory and Hypotheses

Standard Theoretical Model: Three Mechanisms

Among researchers from different disciplines (e.g., sociology, economics), there is consensus that three general mechanisms underlie the second-language (L2) acquisition of immigrants (Chiswick and Miller 2001, 2007; Esser 2006; Hwang and Xi 2008; Mesch 2003; Stevens 1999). These mechanisms have to do with L2 exposure, economic incentives, and the efficiency with which immigrants learn new languages:

$$\text{L2 proficiency} = f\{\text{exposure } (+), \text{ incentives } (+), \text{ efficiency } (+)\}$$

This "Standard Theoretical Model" argues, first, that L2 proficiency is determined by the amount of *exposure* to L2. Immigrants can be exposed to L2 before migration (e.g., when L2 is their mother tongue) and they can be exposed to L2 after migration, such as via the language use of their partner, friends, children, neighbors and colleagues, or by listening to the radio, watching television or reading newspapers (Stevens 1992).

However, learning a new language is not only determined by exposure. L2 proficiency is also an outcome of economic *incentives*. Acquiring a new language is often a difficult and time consuming process. More specifically, there are costs of learning (e.g., tuition fee, course materials) and opportunity costs (i.e., forgone

earnings when not working for pay), and these costs have to be outweighed by the expected economic gains in the (nearby) future.

Finally, L2 proficiency is said to be an outcome of *efficiency*. Not all people are alike in their efficiency to learn a new language. Some people have more innate abilities to learn, and to acquire a new language, more specifically. In addition, people's life histories and their current social context can hamper or foster the efficiency with which they learn a second language.

Standard Empirical Model: Bridge Assumptions and Testable Hypotheses

In empirical research, researchers have been unable to directly test the three mechanisms of L2 proficiency. There are no direct measures of efficiency, economic incentives and exposure. As a result, researchers have tested the importance of these mechanisms indirectly, by formulating bridge assumptions and subsequently deriving a series of hypotheses on observable individual and contextual determinants of L2 proficiency.

In many cases, however, these determinants are not one-to-one related to a certain mechanism. This means that researchers generally treat the mechanisms of efficiency, incentives and exposure as part of a single theory on language learning. For instance, researchers have hypothesized about the role of age at migration using all three mechanisms (Esser 2006; Stevens 1999). It is assumed that immigrants who arrive at a younger age are more sensitive to learning new languages (i.e., efficiency argument), that they are more strongly exposed to L2 after immigration – such as at school – (i.e., exposure argument), and that they have more incentives to invest in L2, because the expected time period in which they could benefit from L2 investments is larger (i.e., incentives argument).

The hypothesized effect of age at migration is part of a Standard Empirical Model of immigrants' L2 proficiency that has been developed and tested in the literature. Length of stay in the host country is another ingredient of SEM. Most notably, it is assumed that immigrants who have remained longer in the receiving country have been more exposed to L2, resulting in better L2 skills. Furthermore, it is argued that immigrant men have better L2 skills than immigrant women, because men are more oriented to the labor market (i.e., higher incentives), and because of higher employment rates, they are also more strongly exposed to L2.

The role of education also belongs to SEM. Education is hypothesized to positively affect L2 proficiency, as higher educated immigrants are more efficient in learning in general, and higher educated individuals generally also have more knowledge of languages. Furthermore, higher education is also associated with higher incentives for investing in L2, as many better paid jobs (in contrast to lower-skilled manual work) require good knowledge of L2. Also, immigrants can be exposed to L2 at school.

Another ingredient of SEM, though examined somewhat less often, is settlement intention. Intentions to stay in the host country are assumed to be important,

as the economic gains to invest in language learning are higher when immigrants expect to profit from such investments for a longer time period.

SEM can be summarized as follows:[1]

L2 proficiency = f{age at arrival host country (–), education (+), male (+), length of stay host country (+), settlement intentions (+)}

There is a rich and rapidly growing literature on the L2 skills of immigrants that tested SEM (e.g., Beenstock, Chiswick and Repetto 2001; Carliner, 2000; Chiswick and Miller 1996, 1998, 2001, 2007; Dustmann 1994, 1999; Dustmann and Fabri 2003; Espenshade and Fu 1997; Espinosa and Massey 1997; Hayfron 2001; Hwang and Xi 2008; Stevens 1999; van Tubergen and Kalmijn 2009). Although there is overwhelming empirical support for SEM, many studies, however, have mainly tested it by examining the language acquisition of family and labor migrants.

Extensions of the Standard Empirical Model

Although the hypotheses tested in earlier studies on family and labor immigrants can be theoretically applied to refugees as well, whether we find the same patterns among this population, however, remains in question. Refugees differ from family and labor migrants in terms of migration motives and integration trajectories.

Two earlier studies that addressed this question suggest that SEM can also be applied to refugees. One study analyzed refugees and other immigrants (Russians, Somalis, Hmong and Mexicans) living in the Midwest. In line with SEM, it was found that English skills were higher among men, among those who migrated to the United States at a young age, who resided in the United States for a longer time period and who obtained a college diploma (Fennelly and Palasz 2003). Another study examined language acquisition over a 10-year period for 608 Southeast Asian refugees who moved to Vancouver, Canada (Beiser and Hou 2000; Hou and Beiser 2006). Again, it was found that English skills were higher among men, among those who arrived at a younger age, those who had been in Canada for a longer time, and those who had obtained more pre- and post- migration education. In the current study, I examine whether we find the same patterns among refugees in the Netherlands, and also look at the other ingredient of SEM, settlement intentions.

Previous research has also found that, even after factors such as age at migration, education and length of stay are taken into account, refugees are less proficient in L2 than labor and family migrants (Chiswick and Miller 2001; Van Tubergen and Kalmijn 2005). Here I develop hypotheses that specifically focus on the different, and sometimes problematic, conditions of the refugee group. These include hypotheses on the length of stay in a reception center, the importance of having followed an integration course, social participation, and the consequences of de-

pression and health problems. I also look at the impact of whether an individual lived in a rural vs. urban area in his or her country of origin.

The first hypothesis is concerned with the time refugees remained in a *refugee reception center*, as "asylum seekers." Asylum seekers are those who have fled their own country and apply to the government for protection as a "refugee." Not all asylum seekers acquire the formal status of a refugee, however, and are sent back to their countries of origin. While awaiting a decision on their refugee status and residence permits, asylum seekers can spend months or even years in application centers, asylum seeker centers, and research and reception centers. Similar admission policies to those in the Netherlands have been implemented in other European countries as well.

Although beyond their control, the length of time refugees have remained in a refugee reception center can have important consequences for their language learning. While staying in a reception center, the opportunities for asylum seekers to establish contacts with natives are strongly constrained, thereby leading to less exposure to L2 than if they were living outside such centers. In addition, while waiting for a decision about residency, asylum seekers are uncertain whether or not they will be allowed to stay, making the investment in L2 less attractive. Furthermore, during the asylum procedure, asylum seekers are allowed to work for only few hours, thereby reducing the short-term incentives to invest in L2 skills as well. Based on these arguments, I hypothesize that *the longer refugees remain in reception centers, the lower their L2 skills*.

If asylum seekers receive permanent residency and acquire refugee status, the Dutch government offers them the opportunity to participate in a so-called "*integration course*." In this course, they receive some training in the Dutch language, but they are also taught about the Dutch values, norms, practices and the justice system. Naturally, during this course, refugees are exposed to L2, but at the same time, refugees might participate less in the labor market–thereby reducing exposure to L2 at work. Overall, however, one would expect a positive effect of participation in an integration or language course on their L2 proficiency. In earlier studies on labor and family immigrants in Israel (Beenstock 1996; Beenstock, Chiswick and Repetto 2001), the United States (Gonzalez 2000), Norway (Hayfron 2001) and Belgium (Van Tubergen and Wierenga, forthcoming), a statistically significant, but small, positive effect of having followed a language course was found. In a study of South-East Asian refugees in Canada, however, no effect of participating in English language classes was found (Beiser and Hou 2000; Hou and Beiser 2006), but possibly the finding was the result of too little variation to demonstrate associations. I hypothesize that *refugees who have completed an integration course in the Netherlands successfully, are more proficient in L2 than other refugees in the Netherlands*.

A major problem for language learning of refugees in the Netherlands, is that they have little contact with native Dutch. Possible settings in which refugees could establish contacts with natives are organizations such as sport clubs and

socio-cultural associations. Although people become members of a sports club to actively participate in a sport, a sport club and an association also provide important opportunities for refugees to interact with natives. In an earlier study conducted in the United States, Espinosa and Massey (1997) found that Mexican immigrants who were member of a sports club or social club had better English language skills than those who were not members of a club. Based on these theoretical and empirical arguments, I hypothesize that *refugees who are members of a voluntary organization have better L2 skills than other refugees*.

The frequency of contacts with native Dutch, and thereby the exposure to L2, can also be determined indirectly by the refugees' *place of living in the country of origin*. Many Western countries, including the Netherlands, are highly urbanized – and much more so than sending countries such as Afghanistan, Iran, Iraq, Somalia and former Yugoslavia. Refugees who lived in a (major) city before migrating to the Netherlands are possibly more adapted to the urban culture and might have a more individualistic attitude than those who lived in a more rural area – who are more dissimilar to the Dutch. Because of the homophily principle (McPherson, Smith-Lovin and Cook 2001), people who lived in a more urban area before migration are more likely to establish contacts with native Dutch, thereby increasing the exposure to the Dutch language. Hence, I hypothesize that *refugees who lived in a (major) city before migrating have better L2 skills than those who lived in a more rural area*.

A final possibly important determinant is health status, a factor less researched in the literature on language acquisition, but especially relevant for refugees. Many refugees have experienced negative events and extreme stress, due to war, oppression, poverty and loss of family members and friends in their countries of origin (Marsella et al. 1994). Traumas continue to play a role in the receiving country, possibly intensified by their stay in a reception center and uncertainties about their future. Health problems, and depressive feelings in particular, can hamper the efficiency of learning a new language (Chiswick and Miller 2001; Van Tubergen and Kalmijn 2005). I therefore hypothesize that *refugees who have more health problems and depressive feelings are less skilled in L2.*

Empirical Model

In the current study, I test hypotheses subsumed under SEM (with data on refugees), and also test new hypotheses (thereby extending SEM theoretically). Note that, following some earlier studies, I make a distinction between education obtained prior and after migration (e.g., Dustmann 1997). The empirical model tested in this article is as follows:

> L2 proficiency = f{age at arrival host country (–), education in origin country (+), education in host country (+), male (+), length of stay host country (+), settlement intentions (+), length

of stay in refugee reception centre (–), integration course (+), membership organization (+), migrated from a city (+), depression and health problems (–)}

Data

I make use of the Sociale Positie en het Voorzieningengebruik van Nieuwkomers, a survey on the major refugee groups in the Netherlands (ISEO & SCP 2003). The sampling frame consisted of foreign-born households from Afghanistan, Iran, Iraq, Somalia and the former Yugoslavia who resided in 12 major cities in the Netherlands. In 2003, face-to-face interviews were conducted with members of these groups. Response rates varied between 43 percent and 55 percent. These response rates may seem low compared with international standards, but they are normal for large-scale surveys conducted in the Netherlands, including surveys among other immigrant groups and the native population (Stoop 2005). Additional analyses showed that the survey is representative in terms of age, gender and regional distribution (Schothorst 2004). The survey was conducted by a bureau well experienced with interviewing ethnic minorities, and the survey was specifically designed to study refugees. Interviews were conducted in Dutch, English and French.

Within the household, different household members were interviewed, although to a different degree. The head of the household was interviewed more extensively than the partner and children. Because the partner and children were not interviewed about their language skills, I focus on the head of the household only. In total, 3,547 heads of the household were interviewed. After deleting the few cases with missing information (except for father's education), I have a sample of 3,445 respondents. Note that I only focus on the first generation (i.e., the foreign-born population), and that refugees, not asylum seekers, were surveyed.

Measurement

Dependent Variables

I examine language skills by looking at speaking and reading skills. Although theoretically, no hypotheses are formulated about differential effects on speaking and writing proficiency, it is interesting to explore both language dimensions empirically, and there is some evidence in the literature for differential effects (Esser 2006). The skills in *speaking* Dutch were rated by the interviewer on a three-point scale, with answer categories (1. bad, (2. moderate, (3. well. Proficiency in *reading* Dutch was assessed by the respondent. Respondents were asked if they could read Dutch newspapers, letters or folders. Answer categories were: (1. no, not at all; (2. no, difficult; (3. yes, fairly well; (4. yes, very well. The Pearson correlation between the self-assessed reading skills and the speaking skills assessed by the interviewer is .62.

In the empirical analysis, I estimate binary logistic regression models for each language dimension. With respect to speaking skills I contrast those who speak

Dutch well (1) with those who have moderate or bad Dutch language skills (0). Likewise, reading skills are estimated by contrasting those who read Dutch (fairly or very) well (1) with those who read Dutch not at all or who find it difficult (0). In this way, the results of the two outcomes can be better compared. A drawback of analyzing dichotomous outcomes is that information on differences within the two categories is lost. However, in the present case, the binary logistic method has advantages over the ordered logit regression (i.e., proportional odds assumption violated) and the multinomial logit regression (i.e., too many contrasts to see patterns). An additional advantage is that many previous studies have likewise analyzed L2 skills in this way.

Independent Variables

Age at the time of migration is measured in years.[2] *Length of stay* in the Netherlands is measured with several dummy variables representing the non-linear increase with time. *Pre-migration education* has been measured in five categories: none, primary, lower secondary, higher secondary and tertiary. The measure refers to the highest obtained diploma. With respect to *post-migration education* I use the same categories. Those who are enrolled in school at the moment of the survey are treated as if they would complete their present education successfully.

Respondents were asked about their *last place of living* before migrating to the Netherlands. Based on this question, I distinguish between major city, smaller city, village or any other place (e.g., refugee camp). *Settlement intentions* are measured as the respondent's future expectations of staying in the Netherlands. Dummy variables are included, distinguishing those who intend to return to the home country, those who intend to stay in the Netherlands, and those who don't know. With respect to participation in an *integration course*, I distinguish between no participation, participation with diploma, participation without diploma, currently participates. I include a dummy variable representing membership in a *voluntary organization*.

To examine the role of refugees' health, I look at health in general and depressive symptoms more specifically. *Health problems* are measured by self-reported health on a five-point scale from "excellent" to "very bad." It is treated as an interval variable in the analyses. *Depression* is measured by four questions on non-depressive and depressive symptoms within the four weeks prior to the interview. Respondents were asked whether they were energetic, calm, depressive and nervous, to which they could respond with yes, sometimes or never. Answers to these four questions were recoded in the same direction, summed and divided by four (Cronbach's alpha .78). The Pearson correlation between self-reported health problems and the measure of depression is .51.

I control for refugee group, current place of living and father's education. *Refugee group* is measured by the country of birth of the respondent and the parents. The *current place of living* is measured at the municipality level (comparable to a city). I include dummy variables for each of the major municipalities in

the Netherlands (i.e., Amsterdam, Rotterdam, The Hague, Utrecht), as well as a dummy variable for all smaller cities together. *Father's education* is measured in the same way as respondent's pre-migration education.[3] Prior research has show that father's education has a significant effect on L2 proficiency among immigrants in Germany (Dustmann 1997).

Table 1 presents the descriptive statistics for the independent variables.

Although the survey I use contains important and rather unique information on migration and integration variables (i.e., information not included in the often used census data), a weakness of the survey is that it does not allow for a strong test of the causality of the relationships. Naturally, language learning is a dynamic process that takes a considerable period of time, and language skills play an important role in immigrant adaptation. Panel data are therefore better suited than cross-sectional data, but there are hardly any panel studies among immigrants available (exceptions are Hou and Beiser 2006; Chiswick, Lee and Miller 2004). It is standard practice in the literature on the language acquisition of immigrants to use cross-sectional data, most frequently census data (Esser 2006; Chiswick and Miller 2007).

I recognize the well-known problems of cross-sectional data, although in the present case it is important to note that these problems do not pertain to all estimated effects. More precisely, endogeneity problems are less severe for the estimates of the effects of *pre-migration* characteristics on second language acquisition. Thus, the impact of gender, country of birth, pre-migration education, education father, last region of living and age at migration on language acquisition can be reasonably well-estimated with cross-sectional data, because there is no selectivity in terms of pre-migration language skills (i.e., the refugees who came to the Netherlands had no Dutch language skills upon arrival), and reverse causality is impossible (e.g., investments in language after migration cannot affect people's gender). Selective remigration related to pre-migration characteristics is theoretically possible, but in practice very few refugees returned to their home country.

With respect to *post-migration* characteristics, however, endogeneity issues are presumably more problematic, although to a different degree. Clearly, refugees' employment status and the frequency of contacts he or she has with natives are affected by L2 proficiency, and that's the reason that variables directly measuring employment status and contacts with Dutch are omitted from this study. On the other hand, post-migration characteristics like length of stay in the country and in the reception center seem to be less affected by L2 proficiency, though endogeneity problems cannot be excluded. The status of the remaining post-migration variables estimated in this study is unclear. For example, depression can lead to problems in acquiring a new language (as assumed here), but it could also be that better knowledge of L2 reduces the risk of depression, or that another variable – not included in the model – explains both depression and language acquisition. With cross-sectional data, I can only test a necessary though not sufficient condition for causal effects, namely that there is a significant (positive or negative) association.

Table 1: Descriptive Statistics of Independent Variables

	Range	Mean	SD
Pre-migration			
Education			
None	0/1	.1071	
Primary	0/1	.2589	
Secondary – lower	0/1	.1385	
Secondary – higher	0/1	.2877	
Tertiary	0/1	.2078	
Education Father			
None	0/1	.1652	
Primary	0/1	.2104	
Secondary – lower	0/1	.1750	
Secondary – higher	0/1	.1866	
Tertiary	0/1	.1614	
Missing	0/1	.1013	
Place of Living			
Major city	0/1	.7454	
Small city	0/1	.1681	
Village	0/1	.0761	
Other	0/1	.0104	
Age at Migration	0-78	27.9036	10.6582
Male	0/1	.6830	
Country of Origin			
Afganistan	0/1	.2075	
Iraq	0/1	.2032	
Iran	0/1	.2084	
Former Yugoslavia	0/1	.1936	
Somalia	0/1	.1872	
Post-migration			
Settlement Intentions			
Intends to return	0/1	.3443	
Intends to stay	0/1	.4697	
Doesn't know	0/1	.1861	
Depression	1-3	1.7369	.6590
Health Problems	1-5	2.2313	1.053
Length of Stay			
0-3 years	0/1	.0218	
4-6 years	0/1	.1626	
7-9 years	0/1	.2830	
10-12 years	0/1	.3509	
> 12 years	0/1	.1817	
Years in Reception Centre	0-10.5	.8057	1.2292
Integration Course			
Never followed	0/1	.5179	
Yes, with diploma	0/1	.2848	
Yes, no diploma	0/1	.1309	
Yes, currently enrolled	0/1	.0665	
Education			
None	0/1	.4017	
Primary	0/1	.3062	
Secondary – lower	0/1	.0717	
Secondary – higher	0/1	.1167	
Tertiary	0/1	.1036	
Member Organization	0/1	.1823	

Table 1 *continued*

	Range	Mean	SD
City of Living			
Amsterdam	0/1	.1785	
Rotterdam	0/1	.1628	
The Hague	0/1	.0795	
Utrecht	0/1	.0842	
Eindhoven	0/1	.0810	
Smaller city	0/1	.4139	

Table 2: Dutch Speaking and Reading Proficiency of Refugees in the Netherlands

	Afghanistan	Iraq	Iran	Former Yugoslavia	Somalia
Speaking					
Bad	12.4	17.4	7.7	8.2	12.1
Moderate	31.2	25.9	16.0	18.7	27.0
Well	56.4	56.7	76.3	73.0	60.9
Reading					
Not at all	6.3	7.6	3.5	5.4	6.2
Difficult	17.3	21.9	13.6	12.3	20.6
Fairly well	40.6	36.1	28.4	24.6	34.4
Very well	35.8	34.4	54.5	57.7	38.8
N	715	700	718	667	645

Results

For explorative purposes, Table 2 presents descriptive findings on the speaking and reading proficiency of refugees. We see that there are some differences in L2 proficiency across groups. Refugees from Iran and former Yugoslavia have better speaking and reading skills than the other groups. About 76 percent of the Iranians and 73 percent of the Yugoslavians speak Dutch well, as compared to 61 percent of the Somali, 57 percent of the Iraqi and 56 percent of the Afghani.

Table 3 shows the results of the binomial logistic regression models of speaking and reading proficiency. Following earlier research, I make a distinction between pre-migration and post-migration characteristics to organize the hypotheses and models (Esphenshade and Fu 1997; Hou and Beiser 2006). I therefore estimated two different models for each language dimension: one model containing only pre-migration characteristics (models 1 and 3), and a second model in which post-migration characteristics are added (models 2 and 4). In this way, we can see how the effect of pre-migration characteristics can be (partly) interpreted by different life courses after migration.

Pre-Migration Characteristics

Table 3 shows that pre-migration education is positively associated with L2 skills. Thus, refugees who had obtained higher qualifications before migrating to the Netherlands

have significantly better skills in reading and speaking Dutch. The association between pre-migration education and language proficiency is more pronounced for reading than for speaking, suggesting that reading skills require more formal instruction (e.g., literacy, learning to write). When taking into account post-migration characteristics (models 2 and 4), the relationship between pre-migration education and language proficiency diminishes, although it remains statistically significant.

Table 3: Binomial Logistic Regression of Dutch Speaking and Reading Proficiency among Refugees in the Netherlands in 2003

	Speaking Proficiency				Reading Proficiency			
	Model 1		Model 2		Model 3		Model 4	
Characteristics	OR	t-value	OR	t-value	OR	t-value	OR	t-value
Pre-migration								
Education (reference = none)								
Primary	.92	(-.56)	.82	(-1.28)	1.45	(2.46)*	1.32	(1.72)
Secondary – lower	1.56	(2.62)*	1.70	(2.45)*	1.84	(3.49)*	1.47	(1.64)
Secondary – higher	1.92	(4.27)*	1.88	(3.16)*	3.45	(7.45)*	2.65	(4.31)*
Tertiary	3.40	(7.19)*	2.91	(4.96)*	5.62	(9.28)*	3.90	(5.63)*
Place of Living (reference = major city)								
Small city	.74	(-2.63)*	.72	(-2.66)*	.75	(-2.29)*	.70	(-2.56)*
Village	.73	(-1.97)*	.72	(-1.92)*	.63	(-2.66)*	.63	(-2.50)*
Other	1.22	(.47)	1.00	(-.01)	1.86	(1.07)	1.67	(.88)
Age at Migration	.91	(-18.00)*	.94	(-13.00)*	.92	(-16.40)*	.94	(-12.00)*
Male	1.44	(3.98)*	1.19	(1.68)	1.52	(4.10)*	1.17	(1.38)
Education Father (reference = none)								
Primary	1.30	(2.08)*	1.23	(1.50)	.99	(-.07)	.91	(-.66)
Secondary – lower	1.57	(3.25)*	1.42	(2.34)*	1.63	(3.23)*	1.49	(2.45)*
Secondary – higher	1.83	(4.35)*	1.56	(2.95)*	1.54	(2.77)*	1.32	(1.67)
Tertiary	2.24	(5.21)*	2.01	(4.12)*	2.35	(4.52)*	2.02	(3.46)*
Missing	.86	(-.97)	.86	(-.91)	1.51	(2.41)*	1.55	(2.40)*
Country of Origin (reference = Afghanistan)								
Iraq	1.09	(.69)	.94	-.45)	.75	(-2.11)*	.72	(-2.08)*
Iran	2.47	(6.79)*	1.46	(2.46)*	1.26	(1.56)	.90	(-.62)
Former Yugoslavia	2.44	(6.16)*	1.62	(2.89)*	1.72	(3.24)*	1.32	(1.45)
Somalia	1.22	(1.49)	.88	(-.85)	.82	(-1.36)	.65	(-2.49)*
Post-migration								
Settlement Intentions (reference = intends to return)								
Intends to stay			1.23	(2.11)*			1.24	(1.99)*
Doesn't know			.83	(-1.48)			1.20	(1.24)

Table 3 also finds, as expected, that those who lived in a major city before migrating to the Netherlands have significantly better speaking and reading skills. For example, Model 3 shows that those who lived in a major city have a (1/0,75) 1.33 times higher odds to read Dutch well compared to those who originate from a small city, and a 1.58 times higher odds to read Dutch well compared to those who migrated from a village. These differences by pre-migration place

Length of Stay (reference = 0-3 years)						
4-6 years	2.92	(3.50)*			4.28	(4.83)*
7-9 years	4.13	(4.70)*			6.42	(6.22)*
10-12 years	7.25	(6.56)*			9.31	(7.46)*
> 12 years	8.76	(6.89)*			9.82	(7.25)*
Depression	.96	(-.60)			.79	(-2.74)*
Health Problems	.76	(-5.52)*			.79	(-4.35)*
Years in Reception Centre	.89	(-3.11)*			.92	(-2.05)*
Education (reference = none)						
Primary	1.39	(2.20)*			.96	(-.26)
Secondary – lower	2.67	(4.87)*			2.44	(3.41)*
Secondary – higher	4.39	(7.05)*			4.07	(4.77)*
Tertiary	4.45	(5.68)*			2.92	(3.38)*
Integration Course (reference = never followed)						
Yes, with diploma	1.65	(4.57)*			2.78	(7.56)*
Yes, without diploma	.72	(-2.52)*			.85	(-1.20)
Yes, currently enrolled	.55	(-3.41)*			.79	(-1.38)
Member Organization	1.42	(2.76)*			1.63	(3.12)*
City of Living (reference = smaller city)						
Amsterdam	.90	(-.79)			1.60	(3.04)*
Rotterdam	.80	(-1.75)			1.17	(1.07)
The Hague	.78	(-1.51)			.63	(-2.61)*
Utrecht	.85	(-.99)			.85	(-.91)
Eindhoven	1.32	(1.62)			.90	(-.55)
Chi^2 model	779	1,211		652	1,023	
Df	18	40		18	40	
R^2 (Nagelkerke)	.28	.41		.26	.39	

Notes: N = 3,445

*p < .05 (two-sided test).

of living remain almost unchanged when we look at the models that take post-migration determinants into account.

The models show a significant relationship between age at migration and language proficiency. As expected, I find that, net of other pre-migration variables in the model, refugees who arrived at an older age, speak and read Dutch less well than those who arrived at a younger age (models 1 and 3). The relationship is substantial: for every additional year at the time of migration, the odds of speaking and reading Dutch well declines about 9 percent. When post-migration determinants are added to the model (models 2 and 4), the relationship between age at migration and L2 proficiency remains significant, though it reduces in size to about 6-6.5 percent. This suggests that about 25 percent of the positive role of arriving at a younger age in the receiving country is associated with more "favorable" life trajectories after migration, such as attending school, taking an integration course or becoming member of a voluntary organization.

The results show evidence for gender differences in language acquisition. When taking into account only pre-migration characteristics, male refugees have better language skills than female refugees. Males have a 1.44 times higher odds of speaking Dutch well (Model 1), and a 1.52 times higher odds of reading Dutch well (Model 3). When post-migration characteristics are taken into account, gender differences in language proficiency are not statistically significant anymore. This could be seen as further evidence for the differential orientation of men and women to the labor market (e.g., males completing an integration course successfully more often than women – results not presented here). Alternatively, however, one could argue that gender differences remain, but that they go unnoticed in this study. The present analysis is based on heads of households (who are mainly men), and refugee women who are not the heads of the households might have significantly lower L2 skills.

Interestingly, when we look at the control variables, the results show a positive association between father's education and L2 skills. Thus, the higher the education of the father, the better the L2 skills of refugees in the Netherlands. This association is found for both speaking and reading proficiency, and it is controlled for refugees' pre-migration education. The magnitude of the relationship is also substantial. For example, compared to refugees whose father has received no education, those with a tertiary educated father have a 2.24 times higher odds of speaking Dutch well (Model 1) and a 2.35 times higher odds of reading Dutch well (Model 3). The positive correlation even remains after controlling for post-migration characteristics.[4]

Post-Migration Characteristics

With respect to post-migration characteristics, we see a significant association between settlement intentions and L2 skills. Refugees who plan to stay in the Netherlands speak and write better Dutch, although the magnitude of the rela-

tionship is rather small. Those who plan to settle permanently in the Netherlands have a 1.2 times higher odds of speaking and reading Dutch well than those who intend to return to their country of origin.

Length of stay in the Netherlands is associated with better language skills. The strongest increase is in the beginning, i.e., within the first three years after arrival. Compared to those who stayed in the Netherlands for less than four years, those who remained in the Netherlands for four to six years have a 2.92 times higher odds of speaking Dutch well and a 4.28 times higher odds of reading Dutch well. Note that there is no significant increase in language skills after 10-12 years (i.e., the contrast between 10-12 years and 13 years or more is insignificant; results not presented here).

As hypothesized, I find evidence that health problems and depression are negatively correlated with the acquisition of a new language. Although I do not find a significant association between depression and speaking skills (controlled for health), refugees with more depressive symptoms are significantly less skilled in reading Dutch.

I also find a significant relationship between duration of stay in a reception center and L2 proficiency. As expected, longer participation in a refugee reception centre in the Netherlands is negatively associated with L2 proficiency. I find that for every year that a refugee stays in a reception center in the Netherlands, the associated odds of speaking Dutch well decreases about 10 percent, and the odds of reading Dutch well diminishes by 8 percent.

Post-migration education is clearly associated with better L2 skills. More specifically, I find that those who obtained a diploma in the Netherlands, particularly at the higher level, are more proficient in speaking and reading Dutch. Thus, compared to refugees who did not go to school in the Netherlands, refugees who have received a tertiary education in the Netherlands have a 4.45 times higher odds of speaking Dutch well and a 2.92 times higher odds of reading Dutch well.

We also see that refugees who successfully completed an integration course have better L2 skills – in particular reading skills – than other refugees. Thus, refugees who obtained an integration course diploma have a 1.65 times higher odds of speaking Dutch well and a 2.78 times higher odds of reading Dutch well compared to refugees who never participated in such a course. Interestingly, refugees who currently follow an integration course and those who participated without completing the course successfully, speak Dutch *less* well than refugees who never followed an integration course, suggesting that those with fewer command of the Dutch language are more likely to enroll in such courses.

The results also show that participating in voluntary organizations is associated with better L2 skills. Refugees who are members of an organization have a 1.42 times higher odds of speaking Dutch well and a 1.63 times higher odds of reading Dutch well compared to refugees who are not members of an organization.

Conclusion and Discussion

Interest in the language skills of immigrants is rapidly growing. Despite this growing interest, however, previous research has mainly concentrated on the language proficiency of family and labor immigrants. In this study, I have examined the language acquisition of refugees, a population less-well researched in the literature. Refugees make up a sizable part of the foreign-born population in Western countries, and their specific migration history and life trajectory after migration call for a separate analysis. In the current study, I use the theoretical insights from previous research on family and labor migrants and apply them to the case of refugees. More specifically, researchers have argued that second-language (L2) proficiency is an outcome of the amount of exposure to L2, the efficiency with which people learn a new language, and the economic incentives of investing in L2 acquisition (Standard Theoretical Model). In previous studies, these general mechanisms have been used to deduce testable hypotheses. This Standard Empirical Model has received ample empirical support in studies on family and labor immigrants.

My study suggests that hypotheses subsumed under SEM are also confirmed when applied to refugees. Using large-scale survey data on refugees from Afghanistan, Iran, Iraq, Somalia and former Yugoslavia who moved to the Netherlands, I find that the L2 proficiency of refugees is higher among those who arrived at a young age, received more schooling prior to and after migration, resided for a longer time period in the Netherlands, and intended to stay in the Netherlands. In addition, I find that, as expected, male refugees have better L2 skills than female refugees, and that gender differences seem to disappear when taking into account the differential post-migration trajectories of male and female refugees. These results on refugees in the Netherlands are in line with previous studies on refugees in the United States (Fennelly and Palasz 2003) and Canada (Beiser and Hou 2000; Hou and Beiser 2006). Overall, then, these findings suggest that despite the different migration background of refugees, and despite their different life course after migration, hypotheses subsumed under SEM are also supported for refugees. Thus, these patterns of L2 acquisition seem to indicate empirical regularities that hold across different kinds of immigrant groups.

That does not mean that additional factors might not be important to understand the L2 acquisition of refugees. The second contribution of this study was to extend SEM theoretically, by deriving new hypotheses from STM that seemed particularly relevant for the study of refugees.

One hypothesis is concerned with length of stay in a reception centre. After arrival in the Netherlands, asylum seekers are placed in reception centers, where they have to wait for a government decision on their status. How long asylum seekers have to stay in such a center can have important consequences for their language learning. It was hypothesized that refugees who have stayed for a longer time period in refugee reception centers (when they were asylum seekers) have fewer

L2 skills. I find indeed that refugees who have resided for a longer time period in reception centers have fewer L2 skills at the moment of the survey (i.e., when they are out of these centers and have the status as refugee). This is in line with the idea that for asylum seekers these centers provide a barrier to day-to-day interactions with natives, thereby limiting their exposure to Dutch. Also, while waiting for the decision concerning the residence permit, asylum seekers are uncertain about their future in the Netherlands and also not allowed to work fulltime – thereby reducing the incentives for mastering the Dutch language.

I also find that those who completed an integration course, and are members of a voluntary organization, have better Dutch speaking and reading abilities than other refugees. Many refugees in the Netherlands have little contact with native Dutch, and these contexts might therefore play an important role for meeting the native Dutch. Both contexts are characterized by intense exposure to the Dutch language, and this could result in increased language acquisition. As the evidence from this study comes from cross-sectional data, however, further research is encouraged to use panel data to shed more light on these issues.

The importance of interethnic contacts, and the resulting exposure to L2, was also examined in a way less sensitive to endogeneity issues, though also more indirectly. I hypothesized that refugees who resided in a (major) city before migration to the (highly urbanized) Netherlands, would more easily integrate in the Dutch society (e.g., more contacts with natives), thereby leading to more exposure to Dutch, than those who came from rural areas. Indeed, I find that refugees who migrated from more urbanized settings are more proficient in the Dutch language. The importance of the region of residence within the country of origin has not been studied before, but given these findings more research seems warranted. Possibly, pre-migration place of living can be of importance not only for language acquisition, but also for other aspects of immigrant integration, such as interethnic contacts, political participation, religion and economic mobility.

Finally, I argued that – in the context of refugees – it is important to look at the role of health and depression. I assumed that health problems and depression reduce the efficiency by which refugees acquire a new language. In line with these ideas, I find that health problems and depression are negatively correlated with the L2 proficiency of refugees.

Although I extended SEM in various ways, SEM remains a largely "individual model." An important extension would be to consider the role of the family, most notably the children and the spouse. Possibly, parents acquire L2 at home through their children, who go to school in the host country and have better L2 skills. However, children can also act as interpreters for their parents (reducing the incentives of the parents to invest in L2), and having children can furthermore reduce labor market participation and thereby L2 exposure outside the home setting. Similar (conflicting) processes can be at work between spouses. To date, however, little is known about the role of the family in language learning among

refugees and immigrants (exceptions are: Chiswick, Lee and Miller 2005a,b; Van Tubergen and Kalmijn 2009).

In summary, this study contributed to the literature by showing that the Standard Empirical Model on immigrants' language acquisition can be successfully applied to a yet unexplored population: refugees. Second, it proposed and tested new hypotheses that seemed specifically relevant for the study of refugees, and these hypotheses were confirmed empirically. Possibly, these results provide insights into the question why previous research has found that refugees are less proficient in L2 than labor and family migrants (Chiswick and Miller 2001; Van Tubergen and Kalmijn 2005). Most prominently, many refugees have to stay for a long time period in a reception center–lowering their exposure and incentives to invest in L2. And, many refugees experience health problems and depression (Marsella et al. 1994), possibly also reducing the efficiency to acquire a new language.

Notes

1. SEM also contains other determinants, such as linguistic distance between L1 and L2, language concentration in the place of living and group size (e.g., Chiswick and Miller 2001; van Tubergen and Kalmijn 2005). Here I only discuss those determinants that will be tested in the present study.
2. In additional analyses, I examined whether age at migration has a non-linear effect on L2 proficiency, as has sometimes been found. I do not find such an effect, however, and the quadratic term is therefore omitted from the tables.
3. Because of the many missing data on father's education (i.e., 10%), I include a separate dummy variable for this.
4. A similar finding was reported by Dustmann (1997) in his study among labor migrants from Italy, Spain, Greece, former Yugoslavia and Turkey in Germany. According to Dustmann (1997), a higher education of the father reflects a more intellectual environment during socialization, which can lead to more positive attitudes towards learning later in life.

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